

In the claims:

For the Examiner's convenience, all pending claims are presented below with changes shown in accordance with the mandatory amendment format.

1. (Currently Amended) A method comprising:

receiving a code segment having a plurality of instructions, the code segment having an outer scope and a number of inner scopes, wherein the plurality of instructions comprise a number of pointers, wherein at least one of the number of pointers is a restricted pointer; ~~and~~

determining a base pointer for each pointer of the number of pointers;

determining a scope of the at least one restricted pointer relative to scopes of each of the number of pointers in the code segment; and

determining whether at least one pointer of the number of pointers is aliased with the at least one restricted pointer, based on the base pointer and scope of each of the restricted pointer and the at least one pointer, when the at least one restricted pointer is out-of-scope relative to the at least one pointer.

2. (Cancelled)

3. (Currently Amended) The method of claim 2, wherein the determining a base pointer for each pointer of the number of pointers comprises[[:]] grouping pointers together upon determining that the pointers are copied to a pointer that is not a restricted pointer.

4. (Original) The method of claim 3, wherein there is no grouping of pointers when the pointers have distinct base pointers.

5. (Original) The method of claim 3, comprising for each instruction of the plurality of instructions that accesses a pointer, determining which at least one restricted pointer is within the scope of the pointer when the pointer is accessed.

6. (Previously Presented) The method of claim 4, wherein the determining whether at least one pointer of the number of pointers is aliased with the at least one restricted pointer is based on the base pointer for each of the number of pointers.
7. (Previously Presented) The method of claim 3, wherein the determining whether at least one pointer of the number of pointers is aliased with the at least one restricted pointer is based on, for each instruction of the plurality of instructions that accesses the pointer, which at least one restricted pointer is within the scope of the pointer, when the pointer is accessed.
- 8-12. (Cancelled)
13. (Currently Amended) A system comprising:  
a memory unit to include a code segment having a plurality of instructions, the code segment having an outer scope and a number of inner scopes, wherein the plurality of instructions comprise a number of pointers, wherein at least one of the number of pointers is a restricted pointer; and  
a compiler unit coupled to the memory, the compiler unit to:  
determining a base pointer for each pointer of the number of pointers;  
determining a scope of the at least one restricted pointer relative to scopes of each of the number of pointers in the code segment; and  
determine whether at least one pointer of the number of pointers is aliased with the at least one restricted pointer, based on the base pointer and scope of each of the restricted pointer and the at least one pointer, when the at least one restricted pointer is out-of-scope relative to the at least one pointer.
14. (Cancelled)

15. (Original) The system of claim 14, wherein the compiler unit is to determine, for each instruction of the plurality of instructions that accesses a pointer, which at least one restricted pointer is within the scope of the pointer when the pointer is accessed.

16. (Previously Presented) The system of claim 15, wherein the compiler unit is to determine whether at least one pointer of the number of pointers is aliased with the at least one restricted pointer based on, for each instruction of the plurality of instructions that accesses a pointer, which of the restricted pointers is within the scope of the pointer when the pointer is accessed.

17. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a machine, cause said machine to perform operations comprising:

receiving a code segment having a plurality of instructions, the code segment having an outer scope and a number of inner scopes, wherein the plurality of instructions comprise a number of pointers, wherein at least one of the number of pointers is a restricted pointer; and

determining a base pointer for each pointer of the number of pointers;

determining a scope of the at least one restricted pointer relative to scopes of each of the number of pointers in the code segment; and

determining whether at least one pointer of the number of pointers is aliased with the at least one restricted pointer, based on the base pointer and scope of each of the restricted pointer and the at least one pointer, when the at least one restricted pointer is out-of-scope relative to the at least one pointer.

18. (Cancelled)

19. (Original) The machine-readable medium of claim 18, comprising for each instruction of the plurality of instructions that accesses a pointer, determining which at least one restricted pointer is within the scope of the pointer when the pointer is accessed.

20. (Previously Presented) The machine-readable medium of claim 19, wherein the determining whether at least one pointer of the number of pointers is aliased with the at least one restricted pointer is based on the base pointer for each of the number of pointers.

21. (Previously Presented) The machine-readable medium of claim 19, wherein the determining whether at least one pointer of the number of pointers is aliased with the at least one restricted pointer is based on, for each instruction of the plurality of instructions that accesses the pointer, which at least one restricted pointer is within the scope of the pointer, when the pointer is accessed.

22-26. (Cancelled)

27. (Currently Amended) The method of claim 6, wherein ~~each of the at least two pointers are aliases~~ the at least one pointer of the number of pointers is aliased with the at least one restricted pointer for the same memory location if the at least two pointers have the same base pointer.

28. (Currently Amended) The method of claim [[6]] 27, wherein if the at least two pointers do not have the same base pointers:

determining whether each base pointer of the at least two pointers is a restricted pointer; and

if each base pointer is a restricted pointer, determining whether ~~any of the~~ each base pointer[[s]] is in scope when the other base pointers are indirectly read or written.

29. (Currently Amended) The method of claim 28, wherein each of the at least two pointers are not aliases for the same memory location if each ~~of the~~ base pointer[[s]] ~~of the at least two pointers are~~ is in scope when the other base pointers are indirectly read or written.

30. (Currently Amended) The method of claim 28, wherein each of the at least two pointers are aliases for the same memory location if at least one base pointer is not in scope when the other base pointers are indirectly read or written. ~~if any base pointer is not a restricted pointer, determining whether each base pointer of the at least two pointers is a restricted pointer or is a parameter pointer.~~

31. (Currently Amended) The method of claim 30, wherein each of the at least two pointers are aliases for the same memory location if any base pointer is a at least one base pointer is not a restricted pointer or is not a parameter pointer and at least one base pointer is a restricted pointer that is not in scope when the other base pointers are indirectly read or written.

32. (Currently Amended) The machine-readable medium of claim 20, wherein ~~each of the at least two pointers are aliases~~ the at least one pointer of the number of pointers is aliased with the at least one restricted pointer for the same memory location if the at least two pointers have the same base pointer.

33. (Currently Amended) The machine-readable medium of claim [[20]] 32, wherein if the at least two pointers do not have the same base pointers:

determining whether each base pointer of the at least two pointers is a restricted pointer; and

if each base pointer is a restricted pointer, determining whether each ~~any of the~~ base pointers is in scope when the other base pointers are indirectly read or written.

34. (Currently Amended) The machine-readable medium of claim 33, wherein each of the at least two pointers are not aliases for the same memory location if each ~~of the~~ base

pointer[[s]] of the at least two pointers are is in scope when the other base pointers are indirectly read or written.

35. (Currently Amended) The machine-readable medium of claim 33, wherein each of the at least two pointers are aliases for the same memory location if at least one base pointer is not in scope when the other base pointers are indirectly read or written, ~~if any base pointer is not a restricted pointer, determining whether each base pointer of the at least two pointers is a restricted pointer or is a parameter pointer.~~

36. (Currently Amended) The machine-readable medium of claim 35, wherein each of the at least two pointers are aliases for the same memory location if ~~at least one base pointer is not a restricted pointer or is not~~ any base pointer is a parameter pointer and at least one base pointer is a restricted pointer that is not in scope when the other based pointers are indirectly read or written.

37. (New) The system of claim 13, wherein the at least one pointer of the number of pointers is aliased with the at least one restricted pointer for the same memory location if the at least two pointers have the same base pointer.

38. (New) The system of claim 37, wherein if the at least two pointers do not have the same base pointers:

determining whether each base pointer of the at least two pointers is a restricted pointer; and

if each base pointer is a restricted pointer, determining whether each base pointer is in scope when the other base pointers are indirectly read or written.

39. (New) The system of claim 38, wherein each of the at least two pointers are not aliases for the same memory location if each base pointer is in scope when the other base pointers are indirectly read or written.